

IN THE SPECIFICATION

Please amend the paragraph beginning at page 20, line 22 to page 21, line 5, as follows:

Further, since the boundary condition is configured such that the plasma generation region 22 is generated at the side wall portion 4b of the present plasma processing apparatus (side portion of the chamber 1), it is preferable that gas injection openings 13 for a processing gas and the like are disposed to inject the gas along the side wall portion 4b, as shown in Fig. 2. By doing this, the processing gas supplied along the side wall portion 4b is dissociated efficiently by the plasma generation region to thereby contribute to the plasma processing.

Please replace the Abstract with the following rewritten paragraph:

A plasma processing apparatus for performing a process on a substrate includes a first chamber for accommodating therein the substrate; a second chamber including a dielectric top plate unit, the second chamber being disposed on an upper portion of the first chamber; and an antenna having a plurality of slots for irradiating a microwave towards an inside of the first chamber through the top plate unit, the antenna being disposed on the top plate. The top plate unit includes a dielectric flat plate portion formed to face the substrate and being in contact with the antenna and a dielectric side wall portion formed to extend from a peripheral region of the flat plate portion towards the substrate. The side wall portion has a thickness not smaller than $\lambda_g/4$ but not greater than λ_g , λ_g being a wavelength of the microwave.